REMARKS

After the foregoing amendment, claims 1-17, as amended, are pending in the application.

The Present Invention

Known electronic article security (EAS) systems detect an article having a resonant tag secured thereto by: (1) radiating a first electromagnetic signal at a primary frequency which is substantially equal to the resonant frequency of a resonant circuit within the resonant tag (2) tuning a receiver to the primary frequency and (3) detecting the presence of a second electromagnetic signal generated by the resonant tag at the primary frequency in response to the resonant tag receiving the first electromagnetic signal.

In contrast to a conventional EAS system, the claimed invention detects an article by detecting the presence of a second electromagnetic signal generated by the resonant tag at a secondary frequency, different from the primary frequency, in response to the resonant tag receiving the first electromagnetic signal at the primary frequency. In an alternative embodiment of the invention, an article is deemed detected only when a components of the second electromagnetic signal are detected at both the primary frequency and the secondary frequency. In a further embodiment, the resonant tag comprises one or more resonant circuits tuned to different secondary frequencies. In response to receiving the first electromagnetic signal at the primary frequency, the resonant tag generates a second electromagnetic signal having components at the resonant frequencies of the one or more secondary frequencies, the detection of which components results in information transfer.

Rejection - 35 U.S.C. § 103

The Examiner rejected claims 1-2 and 12 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,232,878 (Rubin). The Examiner states that Rubin discloses a resonant tag which generates a second electromagnetic signal at a primary frequency and at a predetermined secondary frequency different from the primary frequency and a receiver which generates an output signal when the secondary signal is detected. The Examiner further states that Rubin discloses every feature of the invention except for the computer generating an output signal when the frequency is detected in the electromagnetic signal. The Examiner states it

would have been obvious to one having ordinary skill in the art at the time of the invention for the computer to generate an output signal when the disturbances have been detected. Applicants respectfully traverse the rejection.

Applicants respectfully submit that the Examiner has misconstrued the teachings of Rubin. Rubin is directed to an apparatus for measuring/detecting/deactivating a conventional security tag having a predetermined single resonant detection frequency by detecting the perturbation of a first electromagnetic field radiated by an EAS system at a primary frequency and not, as recited in claims 1 and 12, by detecting a second electromagnetic signal radiated by the tag at secondary frequency different from the primary frequency.

Rubin discloses an apparatus for measuring the electrical characteristics of a resonant circuit 14. Alternatively, Rubin discloses that the same apparatus may be used for detecting the presence of the resonant circuit within a detection region, or for deactivating the resonant circuit. As clearly described at col. 6, line 60 to col. 7, line 24, the apparatus disclosed by Rubin operates by transmitting a signal at a primary frequency to an antenna 16. The antenna 16 radiates a first electromagnetic signal at the primary frequency. When the resonant tag 14 is placed proximate to the antenna 16, the presence of the resonant tag 14 causes a distinctive time varying pattern to form across the antenna 16 at the primary frequency as the frequency of the first electromagnetic signal is swept through the pass band of the resonant tag 14. A demodulator 19, is connected to the antenna. As would be clearly understood by those skilled in the art by examining Figs. 2 and 3, the demodulator is tuned to the primary frequency for detecting the time varying pattern. Consequently, the data processor 20 is responsive to the second electromagnetic signal at the primary frequency, i.e. the frequency of the first electromagnetic signal.

At Fig. 3 and col. 9, line 46 to col. 10, line 43, the apparatus disclosed by Rubin is also described for use in deactivating and detecting a security tag. As would be clearly understood by those skilled in the art upon reading the specification, the receiver 18' is always tuned to the frequency of the transmitter 12' for detecting the second electromagnetic signal. Accordingly, the receiver disclosed by Rubin is always tuned to the primary frequency.

Claim 1 recites, *inter alia*, a resonant tag which generates a second electromagnetic signal in response to receiving a first electromagnetic signal at a primary frequency, where the second electromagnetic signal has components at both the primary

frequency and a secondary frequency different than the primary frequency, and a computer for generating an output signal when the component of the second electromagnetic signal at the secondary frequency is detected. Claim 12 recites a method for detecting an article based on receiving a second electromagnetic signal from a resonant tag in response to the resonant tag receiving a first electromagnetic signal at a primary frequency, where the second electromagnetic signal has components at both the primary frequency and a secondary frequency different than the primary frequency, and generating an output signal when the component of the second electromagnetic signal at the secondary frequency is detected.

As discussed above, Rubin does not teach, suggest or disclose a resonant tag which generates a second electromagnetic signal having components at both the frequency of the first electromagnetic signal (the primary frequency) and at a predetermined secondary frequency, different from the primary frequency, in response to receiving a first electromagnetic signal at a primary frequency. Further, Rubin does not teach, suggest or disclose generating an output when the component of the second electromagnetic signal at the secondary frequency, different than the primary frequency, is detected. Rubin merely discloses a conventional resonant tag, the response of which to a stimulating electromagnetic signal is at to the frequency of the stimulating signal. Further, Rubin merely teaches receiving the second electromagnetic signal at the frequency of the first electromagnetic signal. In contrast, claims 1 and 12 require that: (1) the resonant tag generate a second electromagnetic signal at a frequency different from the primary frequency and (2) the detection of the resonant tag is based on detecting a component of the secondary electromagnetic signal at a secondary frequency different than the primary frequency.

Rubin does not teach, suggest or disclose either of the aforementioned limitations of claims 1 and 12. Accordingly, applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claims 1 and 12.

In respect to claim 2, the Examiner states that Rubin at col. 4, lines 14-30, discloses a resonant tag having coupled resonant circuits, resonant respectively at the primary frequency and a secondary frequency. However, the description at col. 4 refers only to "a resonant security tag 14 of a type which is well known in the art of electronic security (EAS) systems". Applicants respectfully submit that one skilled in the art would understand that a security tag well known to the EAS art would have only a single resonant circuit for

simultaneously generating a response to a stimulating signal and not coupled resonant circuits resonant respectively at a primary frequency and a secondary frequency for generating a response at both the primary frequency and the secondary frequency.

Further, it is respectfully submitted that since claim 1 has been shown to be allowable, claim 2 dependent on claim 1 is allowable, at least by its dependency. Accordingly, for all the above reasons, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claim 2.

Rejection - 35 U.S.C. § 103

The Examiner rejected claims 3-7 dependent on claim 1, and claims 13-15 dependent on claim 12, under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,232,878 (Rubin) in view of U.S. Patent No. 5,798,693 (Engellenner). Applicants respectfully traverse the rejection.

The Examiner has cited the combination of Rubin and Engellenner for disclosing the limitations of claims 3-7 and 14-15. However, as recited in claims 1 and 12 and as discussed in the preceding paragraph, Rubin does not teach, suggest or disclose a resonant tag which generates a second electromagnetic signal having components at both the frequency of the first electromagnetic signal and at a predetermined secondary frequency, different than the frequency of the first electromagnetic signal, in response to receiving the first electromagnetic signal. Further, as recited in claims 1 and 12, Rubin does not teach, suggest or disclose generating an output when the component of the second electromagnetic signal at the secondary frequency, different than the primary frequency is detected.

Engellenner merely discloses a locating system using a resonant tag having a single resonant circuit (Fig. 6 and col. 9, lines 29-48). Engellenner does not teach, suggest or disclose the limitations of claims 1 and 12 (discussed above), which are not taught by Rubin. Accordingly, since claims 1 and 12 have been shown to be allowable over Rubin, and since Engellenner does not teach the limitations of claims 1 and 12 not taught by Rubin, claims 3-7 and 13-15, dependent on claims 1 and 12 respectively, are allowable, at least by their dependency. Accordingly, for all the above reasons, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claim 3-7 and 13-15.

Rejection - 35 U.S.C. § 103

The Examiner rejected claims 8-9 and 16 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,232,878 (Rubin). The Examiner states that Rubin discloses a resonant tag including a plurality of resonant circuits wherein the resonant tag generates a second electromagnetic signal at a plurality of frequencies in response to receiving a first electromagnetic signal at a primary frequency. Applicants respectfully traverse the rejection.

Claim 8 recites, *inter alia,* a transmitter for radiating a first electromagnetic signal at a predetermined primary frequency; a resonant tag having a plurality of resonant circuits each of which resonates a different frequency, the resonant tag generating a second electromagnetic signal comprising a plurality of secondary frequencies in response to receiving the first electromagnetic signal; and a computer detecting the plurality of secondary frequencies and generating an output. Claim 16 recites, *inter alia,* radiating a first electromagnetic signal at a predetermined primary frequency; receiving the first electromagnetic signal in a resonant tag having a plurality of resonant circuits each of which resonates at a different frequency, the resonant tag generating a second electromagnetic signal comprising a plurality of secondary frequencies in response to receiving the first electromagnetic signal; processing the second electromagnetic signal to detect the presence of the secondary frequencies; and generating an output signal.

The Examiner cites Rubin at col. 8, lines 24-31, and col. 10, lines 34-35 for disclosing a tag having a plurality of resonant circuits resonant at different frequencies. However, as discussed above, Rubin at col. 8, lies 24-31 merely discloses a conventional resonant tag 14' having a single resonant circuit, the response of which to a stimulating electromagnetic signal is confined to the frequency of the stimulating signal. Further, as would be understood by those skilled in the art, col. 10, lines 34-35 describes a sequence of transmitter pulses for stimulating the single resonant circuit at different frequencies, where the center frequency of the tag is only approximately known, and not a tag having a plurality of resonant circuits. Rubin merely teaches receiving the second electromagnetic signal generated by the resonant tag at the frequency of the first electromagnetic signal. Rubin does not teach, suggest or disclose a resonant tag which generates a second electromagnetic signal at a plurality of secondary frequencies in response to receiving a first electromagnetic signal at a primary frequency. Further, Rubin does not teach, suggest or disclose receiving the second

electromagnetic signal at a plurality of secondary frequencies different than the primary frequency. Applicants submit that Rubin does not make claims 8 and 16 obvious. Accordingly Applicants respectfully request reconsideration and withdrawal of the §103 rejection of claims 8 and 16.

With respect to claim 9, the Examiner states that Rubin at col. 4. lines 14-30 discloses a resonant tag having first and second coupled resonant circuits. However, the description at col. 4 refers only to "a resonant security tag 14 of a type which is well known in the art of electronic security (EAS) systems". Applicants respectfully submit that one skilled in the art would understand that a security tag well known to the EAS art would have only a single resonant circuit for generating a response to a first electromagnetic signal and not coupled resonant circuits resonant respectively at a primary frequency and a secondary frequency for generating a response at both the primary frequency and the secondary frequency. Further, it is respectfully submitted that since claim 8 has been shown to be allowable, claim 9 dependent on claim 8, is allowable, at least by its dependency. Accordingly, for all the above reasons, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claim 9.

Rejection - 35 U.S.C. § 103

The Examiner rejected claims 10-11 and 17 under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,232,878 (Rubin) in view of U.S. Patent No. 5,798,693 (Engellenner). Applicants respectfully traverse the rejection.

In respect to claims 10 and 17, Engellenner is cited for disclosing pulse amplitude modulation. In respect to claim 11, Engellenner is cited for disclosing a passive tag. However, as recited in claims 12 and 16 and as discussed above, Rubin does not teach, suggest or disclose a resonant tag which generates a second electromagnetic signal having components at both the frequency of the first electromagnetic signal and at a predetermined secondary frequency different than the frequency of the first electromagnetic signal, in response to receiving the first electromagnetic signal. Further as recited in claims 12 and 16, Rubin does not teach, suggest or disclose generating an output when the component of the second electromagnetic signal at the secondary frequency different than the primary frequency is detected.

Engellenner does not teach, suggest or disclose the limitations of claims 12 and 16, which are not taught by Rubin. Accordingly, since claims 12 and 16 have been shown to be allowable over Rubin, and since Engellenner does not teach the limitations of claims 12 and 16 not taught by Rubin, claims 10-11 and 17, dependent on claims 12 and 16 respectively, are allowable, at least by their dependency. Accordingly, for all the above reasons, Applicants respectfully request reconsideration and withdrawal of the § 103 rejection of claim 10-11 and 17.

Conclusion

Insofar as the Examiner's objections and rejections have been fully addressed, the instant application, including claims 1-17, is in condition for allowance and Notice of Allowability of claims 1-17 is therefore earnestly solicited.

Respectfully submitted,

ERIC ECKSTEIN, ~~ET AL~~

June 10, 2003 By: _____
(Date)

LOUIS SICKLES II
Registration No. 45,803
AKIN GUMP STRAUSS HAUER & FELD LLP
One Commerce Square
2005 Market Street, Suite 2200
Philadelphia, PA 19103-7013
Telephone: 215-965-1200
Direct Dial: 215-965-1294
Facsimile: 215-965-1210
E-Mail: lsickles@akingump.com

LS/lcd